

1-1-2012

# Clean Government Initiative Report, 2012

Maine Department of Environmental Protection

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## Recommended Citation

Maine Department of Environmental Protection, "Clean Government Initiative Report, 2012" (2012). *Environmental Protection Documents*. Paper 47.

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STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

To: State and Local Government Committee

From: Directors of the Clean Government Initiative

Date: January 1, 2012

Re: Clean Government Initiative Report 2012

This report is submitted pursuant to MRSA Title 38, Section 343-H, Maine's Clean Government Initiative. This initiative encourages adoption of environmentally sustainable practices by state government and by the state's institutions of higher education as well as ensures environmental regulatory compliance by these entities.

The Directors of the Initiative by statute are the commissioners or the commissioner's designees of the Department of Environmental Protection, and the Department of Administrative and Financial Services, the chancellor of the University of Maine System or the chancellor's designee and the president of the Maine Community College System or the president's designee.

The Clean Government Initiative has produced many successes since it was established in 2002, which have been documented through the biennial reports to the Legislature. This report will summarize selected highlights from the accompanying materials presented in the Appendices that detail the reductions in environmental impact accomplished by Maine State government, the University of Maine System, and the Maine Community College System.

Since the inception of the initiative, Maine has been able to take on more initiatives that further improve the state's performance with regard to reducing the impact it has on the environment. The Clean Government Initiative, which at one time emphasized reports and plans from all agencies and educational institutions, has become more effective by undertaking action and measuring accomplishments. Maintaining agency contacts for communication of applicable compliance issues and reduction initiatives have streamlined and enhanced the effects of the Clean Government Initiative.

Pursuant to the law, the Directors provide this information for your use, hope you find the report helpful, and are seeking no statutory changes at this time on behalf of the initiative.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04679-2094  
(207) 764-0477 FAX: (207) 760-3143

## **Directive**

As per the directive of the initiative, the directors have ensured that environmentally sustainable practices are incorporated into state government planning, operations and regulatory functions, and established metrics to measure and assess the environmental performance of state agencies and state-supported institutions of higher learning.

The successful efforts that the Maine State government demonstrates show that Maine is a national leader when it comes to reducing its environmental footprint, accounting for its environmental aspects, calculating quantitative reduction of environmental impact and documenting the progress the State has made through the Clean Government Initiative.

Appendices:

### **Appendix A.)**

**Impact reductions through the Environmentally Preferable Procurement Policy for Maine State Government**

### **Appendix B.)**

**Impact reductions for Maine's Community Colleges**

### **Appendix C.)**

**Impact reductions for Maine's University system**



# Maine Community College System

**OFFICE OF THE PRESIDENT**  
3 Adams Street, South Portland, Maine 04106  
207.767.0116 • Fax: 207.767.0137  
[www.mccs.me.edu](http://www.mccs.me.edu)

November 30, 2011

Peter Cooke  
Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04330-0017

Re: MCCS Clean Government Initiative Report for the Calendar Years 2010 and 2011

Dear Peter:

Enclosed please find the report of the colleges of the Maine Community College System listing briefly their environmental improvements during the years 2010 and 2011. The list of improvements undertaken and accomplished by the colleges during this period is one of which we are justifiably proud and demonstrates a continuing commitment to the objectives of the Clean Government Initiative.

If you have any comments or questions regarding this report, please feel free to contact me.

Sincerely,

*Amy Homans*

Amy M. Homans  
Assistant General Counsel

Enclosure

Central Maine  
Community College  
Auburn

Eastern Maine  
Community College  
Bangor

Kennebec Valley  
Community College  
Fairfield

Northern Maine  
Community College  
Presque Isle

Southern Maine  
Community College  
South Portland

Washington County  
Community College  
Calais

York County  
Community College  
Wells

**MAINE COMMUNITY COLLEGE SYSTEM  
CLEAN GOVERNMENT INITIATIVE REPORT 2010-11  
ACTIVITIES THAT HAVE BEEN COMPLETED AND/OR REMAIN ONGOING**

**SOUTHERN MAINE COMMUNITY COLLEGE**

**A. Buildings**

1. Installed two new energy efficient boilers in the HUB.
2. Building metering and “dashboard” monitoring system to measure all utility consumption: natural gas, oil, electricity, and water.
3. Installation of Direct Digital Control (DDC) systems in multiple building for improved mechanical efficiency.
4. Continued program of replacing inefficient light fixtures.
5. Continued to install motion-sensitive lighting controls in restrooms, classrooms and other spaces in four buildings.
6. Continued a program of asbestos and lead-paint abatement (as repairs are made).
7. Renovated the Transportation (Automotive) building including:
  - a. Replacing single pane glass to new high efficiency windows
  - b. Installation of solar wall heating panels (alt energy heating system)
  - c. Replaced antiquated boiler with low-energy infrared heating system
  - d. Replaced un-insulated masonry exterior with aluminum clad insulated wall panels
8. Converted the Tripp Building into the Sustainability and Energy Alternatives (SEA) Center including:
  - a. Insulated exterior walls
  - b. Installation of Solar wall panels
  - c. Installation of Photo voltaic panels
  - d. Installation of Solar hot water panels
  - e. Installation of Wind energy turbine
  - f. Multiple equipment supporting weatherization and sustainability, including a small scale pressurized house for teaching
9. Complete renovation and conversion of a dilapidated, un-insulated museum building into high energy efficiency classroom and office space (Lighthouse building).

10. Installed a unique “ocean based” geothermal heating system when renovating the Lighthouse Building.
11. Replaced dilapidated Salt Storage shed eliminating possible ocean contamination problems.

**B. Operations**

12. Established a formal sustainability committee.
13. Through the sustainability committee, developed an action plan for expanding sustainable operations.
14. Continued expansion of purchasing of environmentally friendly products, particularly custodial supplies.
15. Began organic turf management of athletic fields.
16. Instituted a car-pool program through GoMaine! for students and staff to ride share.
17. Continued the free bus pass program for student commuters with several hundred taking advantage.

**C. Air Quality**

18. Reduced greenhouse gas emissions by installing more energy efficient boilers.

**D. Water and Stormwater**

19. Further reduced salt and sand use during wintertime, both significant sources of stormwater pollution.
20. Continued the public education program, including stormwater stenciling, to inform the campus and the local community of the need to reduce stormwater pollutants.
21. Instituted a stormwater pollution prevention plan for Facilities Management.

**E. Recycling and Waste Management**

22. Instituted single stream recycling, reducing waste to EcoMaine to about half of what the college previously generated.
23. Maintained hazardous waste generation at a level that keeps the college in the DEP small-quantity generator category generating less than 500 lb of hazardous waste annually, a new record low.

**F. Security**

24. Security’s new vehicle lease is for a Hybrid vehicle.

## **H. Dining Services**

25. Security's new vehicle lease is for a Hybrid vehicle.
26. New room darkening shades in dining hall to manage temperatures and light.
27. Installation of two high volume low speed industrial fans in dining hall for temperature control.
28. Sodexo donates their empty printer cartridges to a local school who uses them to help a sister school in Africa.
29. Dining hall recycles all glass, aluminum, plastic and cardboard.
30. Xpressnap napkin holders reduce napkin waste by 25%, and the napkins used are made of 100% recycled fiber and 90% post consumer content.
31. Utilize daily production sheets to minimize over-prepping and unnecessary waste.
32. Sodexo employees use permanent-ware mugs for their drinks.
33. They sell the same mugs at our store and offer a \$1 off lunch and dinner service if a customer brings their mug, saving washing.
34. Installed rubber mats in the dishwashing station to reduce china breakage waste.
35. Instituted tray-less dining to reduce food waste as much as 50% and save on water and energy needed for washing.
36. Purchase paper products for catering Sodexo with recycled content.
37. Use Ecolab products to provide a line of environmentally superior dishwashing and cleaning products.
38. Partner with Maine Standard Biofuels to recycle their used vegetable oil and convert it as a "green" renewable fuel.

## **CENTRAL MAINE COMMUNITY COLLEGE**

### **A. Energy Efficiency**

1. Replaced Holophane 400 watt metal halyde lighting in Kirk Hall Fitness Center with more energy efficient T-5 lighting.
2. Replaced 150 watt high pressure sodium single bulb lighting fixture in the CRJ lab in Jalbert Hall 400 wing with more energy efficient T-5 4 bulb fixtures.

3. Replaced the T-12 lighting with more energy efficient T-8 and T-5 fixtures during renovations to Jalbert Hall 400 and 500 wings.
4. Replaced multiple window units with two higher efficiency rooftop HVAC units in Jalbert Hall 300 wing.
5. Replaced three and four bulb T-12 fixtures with more efficient three bulb T-8 fixtures with low wattage ballast in Jalbert Hall 200 wing.
6. Replaced older, less efficient windows that had leaking and hardware issues with new double pane windows in Jalbert Hall 200 wing.
7. Completed replacement lighting in AUT, BCT and PMT labs with more efficient HPT8 lighting.
8. Installed indirect lighting with T-8 technology in renovations to Fortin Hall Dormitory.
9. Where appropriate, the College continues to install motion activated sensor systems when new lighting is installed in campus buildings in order to reduce electricity consumption.
10. Replaced overhead doors in all the shops in the Jalbert Hall 200 wing which helps control heat loss.

**B. Alternative Energy**

11. Installed solar panels for domestic hot water in two dormitories. All campus housing now obtaining all domestic hot water from solar system, with boiler backup.

**C. Recycling and Waste Management**

12. Recycling efforts are monitored by the Safety Committee, which is reviewing conversion to zero sort system.
13. Automotive oil, kitchen oil, computer monitors, batteries and fluorescent bulbs included in recycled items.

**D. Environmentally Preferable Products**

14. Low VOC paint used when feasible in occupied areas.
15. Custodians continue to use environmentally friendly products when feasible.



## **EASTERN MAINE COMMUNITY COLLEGE**

### **A. Energy Efficiency**

1. Natural gas conversion project completed. Transitioned from #2 heating oil to natural gas by converting boilers for Maine Hall, Katahdin Hall, Kineo Hall, Acadia Hall, Schoodic Hall and Penobscot Hall. This project has saved the College \$250,000 in heating costs and \$40,000 in maintenance costs.
2. Maine Hall boiler plant replacement completed. Transitioned Maine Hall to heat pump system. This project has saved the College \$15,000 in maintenance costs.
3. Acadia Hall retrofit completed, which consisted of mechanical, electrical, interior and building envelope upgrades to Acadia Hall dormitory. This project included replacement of an R-5 roof with an R-30 roof, installation of a new boiler, replacement of old lighting with super T-8 fixtures and installation of heating controls. The estimated annual cost savings for this project are as follows:
  - a. Replacement boiler – \$10,000 (in maintenance costs)
  - b. Replacement lighting - \$2,000 (energy savings)
  - c. Building envelope upgrade and heating controls - \$5,000-8,000 (energy savings)
4. The College continues to use energy efficient light bulbs.

### **B. Recycling and Waste Management**

5. The College continues to recycle light bulbs and batteries.
6. Zero sort recycling is scheduled to begin summer 2012.

### **C. Water**

7. Drainage and storm water upgrades on Penobscot and Schoodic Halls completed. Both buildings had major drainage programs which caused damage to the buildings. The new drainage structures redirect storm water to the College's retention pond.

### **D. Environmentally Preferable Products**

8. The College continues to use low VOC paints where feasible.

## KENNEBEC VALLEY COMMUNITY COLLEGE

### A. **Energy Efficiency**

1. Improved HVAC controls systems to automatically default to set back temperatures during non-peak times.
2. The lighting for only one parking area remains on a timer and settings are reviewed periodically.
3. Buildings are shut down as quickly as possible by consolidating classes into two buildings to the extent possible on Saturdays.
4. All boilers are cleaned annually and under a preventive maintenance program.
5. King Hall - Replaced the roof (insulation increased), the building skin, windows and doors, the cooling tower (not pad mounted and off the roof) and numerous heat pumps to increase efficiency and decrease energy consumption.
6. Frye Administration –Replaced the roof (insulation increased), the building skin, windows and doors, the air handling unit and controls.
7. Frye Whitney Wing – Replaced the roof of the Energy Services Lab, removed an exit door and installed a vestibule to decrease cold air penetration.
8. All buildings have been converted from T-12 fixtures/bulbs to T-8. This results in a significant reduction in electrical usage.
9. External lighting around Frye Building is being replaced and will be incorporated into the campus-wide exterior lighting control system.

### B. **Alternative Energy**

10. Installed a 5 KW wind tower, some voltaic panel, and solar panels to offset energy consumption in the Frye Whitney Wing.

### C. **Recycling and Waste Management**

11. Paper, printer cartridges and cardboard are recycled with a qualified vendor. All scrap metal is taken to a recycling facility.
12. The College has converted to “zero-sort” recycling.
13. All returnable bottles and cans are collected and redeemed to support student activities.

**D. Hazardous Materials**

14. All chemical stocks are inventoried, properly stored, and any inappropriate chemicals removed by a certified vendor. Chemicals identified for disposal continue to be removed at least annually. Contracted with a Chemical Hygiene Officer who maintains an electronic database for the College's inventory and MSDS data sheets are located wherever there are chemicals.
15. The Chemical Hygiene and Hazardous Communications policies are updated and the College is in compliance with chemical safety rules.
16. In compliance with all OSHA labeling requirements and continually review the College's MSDS binders.
17. All College buildings are asbestos free.
18. Biomedical waste is disposed of in the proper manner through a licensed vendor.
19. Compliant with Universal Waste stream standards for batteries and fluorescent lights; these are segregated in a restricted area and disposed of properly.
20. All requirements for oil and hazardous substance cleanup and reporting met; no spills during this period.

**E. Air Quality**

21. Air emissions are inspected by the Maine EPA for compliance with the College's air emissions license. The College is in full compliance.
22. Air quality has been tested in all buildings and findings are within normal ranges.

**F. Water**

23. Drinking water has been tested and meets standards of Safe Drinking Water Act.
24. Level spreaders are being monitored and the VORTENS unit in the Lunder parking area was inspected re: wastewater and storm water.

**G. Environmentally Preferable Products**

25. Ninety percent of the products used for the College's cleaning needs are green.

**H. Other**

26. All oil storage tanks have been inspected and are in compliance with applicable rules.

27. Trees continue to be planted on campus.

## **NORTHERN MAINE COMMUNITY COLLEGE**

### **A. Energy Efficiency**

1. The College completed the energy conservation projects that were identified by the energy audit in 2009. These projects included campus wide new LED exterior lighting, internal lighting upgrades, building insulation and air infiltration upgrades, and building DDC controls. The College has seen a 16% reduction in electrical usage and a 24% reduction in fuel usage.
2. The College is currently installing a 900KW pellet boiler to reduce fuel oil consumption in the two largest building on campus. The Mailman Trades and Christie Complex heating plants will be connected via underground piping. Oil fired boilers in the Christie Complex will be used at peak times. The biomass will be used 80% of the time for heating loads. The projected fuel oil reduction has been estimated at 47,000 gallons of #2 fuel.
3. All College boilers were inspected and all required preventive maintenance and cleanings completed.
4. All College HVAC systems underwent all required preventive maintenance and cleanings by contractors or in-house staff.
5. Completed roofing upgrades to Mailman Trades Building increasing the insulation in the building.
6. New rotary air compressor for Mailman Trades to reduce energy consumption.
7. Welding lab renovation project completed to provide better indoor air quality and increase energy efficiency.
8. Domestic hot water upgrade at Snow Hall to increase efficiency using existing boilers and removing oil fired hot water heater.
9. Andrews Hall mechanical renovation completed. Installed new boiler and heat recovery unit and renovated boiler room to increase energy efficiency.
10. Reed Dining Commons mechanical renovation completed. Installed heating connection to Andrews Hall and a new boiler was installed in Andrews Hall to create redundant heating plant and increase energy efficiency. The project also removed old 1980 boiler and oil fired hot water heater.

**B. Alternative Energy**

11. Installation of 10KW wind turbine at the College's Alternative Energy Lab.

**C. Other**

12. The College switched to using ionized water for cleaning by custodial staff.
13. The underground storage tanks (UGST) and monitoring systems were inspected.
14. Annual fuel and VOC report sent to local DEP office per air emissions license requirement.

**WASHINGTON COUNTY COMMUNITY COLLEGE**

**A. Energy Efficiency**

1. Replaced 32 single pane and antiquated windows in Administrative Building
2. Installed energy saving shades in the Administrative Building for new windows
3. Replaced 5 exterior entrances in Administrative Building with energy efficient panelized store fronts. Old doors were allowing air infiltration raising energy use.
4. Replaced and insulated two exterior walls on two hallways in the Administrative building with energy efficient materials. Removed single paned windows and retrofitted with argon windows. In order to increase R-value of walls and reduce air infiltration did not replace unnecessary windows.
5. Replaced metal roof and fixed rubber membrane roofs for the Administrative Building, preventing leaking and heat loss.
6. Resurfaced the metal roof on St. Croix Hall and sealed the brick to eliminate water leakage. The product reflects sunlight to allow the building to be cooler in the summer.
7. Replaced older single paned and damaged windows in instructional area of Howland Hall.
8. Partial replacement of decaying, defective library windows. Remainder of windows in the newer construction of the Administrative Building will be replaced in the spring. These windows were leaking and are an energy drain.
9. Insulated heat pipes above ceiling in Administrative building reducing heat loss and amount of ice on roof.

10. Installed updated electronic controllers in Administrative Building, residence halls, and St. Croix Hall to reduce energy consumption and to better regulate environment for comfort and use.
11. Replaced old and damaged heating baseboards in the residence Halls with more efficient model.
12. Replaced old Univents with modern, energy efficient Univents with reliable controllers in the Peter Pierce Wing of the Administrative Building.
13. Installed metal roofing on Howland Hall.
14. Replaced overhead lights in residence apartments with T5 lights to reduce energy consumption.
15. Received a grant from Efficiency Maine to replace old lighting in Peter Pierce Wing with T5 lights and motion switches.
16. Purchased an energy efficient freezer for Culinary Arts in St. Croix Hall to replace older unit.
17. Replaced older reprographic machines with energy efficient copiers.
18. All computers are energy star - rated computers.
19. Implemented a virtualized server format, which reduced use of A/C, and reduced servers from ten to three, which reduced demand for electricity.
20. Barnes House on Route 1 converted to instructional site for instruction in energy efficient construction and renovation techniques. House is used by Building Construction, Plumbing and Heating, and Electricians program.

**B. Recycling and Waste Management**

21. The Student Senate is assisting the College to establish a more extensive recycling program. This includes card board recycling which is already underway and white paper recycling that the Senate wishes to implement.

**C. Water**

22. Replaced toilets in residence halls with low water use toilets to conserve water.
23. Removed underground storage tank near Howland Hall. Replaced tank with Roth Safety Fuel Tank.

24. Water test of all wells are being conducted on a monthly basis and are meeting Maine Drinking Water standards
25. Installed motion sensor faucets and toilets in bathrooms in the Administrative building.
26. Installed gutters in Administrative Building to redirect water.

**D. Air Quality**

27. Completed air quality study for the Engine Repair and Welding Shops. A proposal for addressing issues has been received from the architects, Oak Point Associates. Work to begin over semester break.
28. Completed air quality study for Howland Hall. A proposal for addressing issues has been received from the architects, Oak Point Associates. Work to be completed by spring 2011.
29. Purchased portable air filtration system for building construction to supplement fixed unit system and reduce dust particles in the air.

**E. Other**

30. Removed old carpeting in the residence hall and replaced this with VCT flooring requiring fewer chemicals and energy use to clean. Also ensures a healthier environment for students.

**YORK COUNTY COMMUNITY COLLEGE**

**A. Energy Efficiency**

1. Installed a new energy management control system including 19 new rooftop HVAC units.
2. Implemented a process to swap out and replace all incandescent light bulbs in personnel offices with the newer, smaller and more energy efficient fluorescent bulbs.
3. Preventative maintenance was performed on the HVAC system.
4. The College boiler was inspected and required preventive maintenance was performed.

**B. Recycling and Waste Management**

5. Hazardous waste generator status has been reclassified with the Maine Department of Environmental Protection as a Very Small Quantity Generator through better awareness and training.

6. Instituted a single stream recycling process. It has increased campus wide awareness of waste recycling and reduced usage of Styrofoam in the cafeteria by 50%.
7. Recycling printer cartridges.

**C. Environmentally Preferable Products**

8. Switched over from a sand/salt mix to “Magic Salt”, an agricultural by-product from the distilling process that is biodegradable and environmentally friendly.
9. Facilities are using all Green Seal cleaning products.

**D. Other**

10. Started a green thumb initiative by planting over 700 perennial flowers.
11. Propane tank farm is inspected yearly for compliance.



## **Appendix A.)**

### **Impact reductions through the Environmentally Preferable Procurement Policy**

In 2004, the State of Maine has established a broad range of product procurement practices oriented toward the preservation of natural resources, the promotion of environmental sustainability and the protection of the health and safety of employees and citizens. The adoption of the EPP (Environmentally Preferable Procurement) policy considered several factors as part of a best value determination when evaluating purchases, including fuel efficiency, recycled content percentages, materials content, emissions, waste generation, toxicity, and recyclability. The Division of Purchases' bid specifications require environmentally preferable certifications which pertain to certain commodities: EnergyStar for appliances, Green Seal for cleaning products, EPEAT Silver or Gold for computer equipment, for example and specifications for the purchase of paper products and printed materials that come from certified sources. "Certified sources" refers to paper products that are procured from a source that is certified by a credible third-party system such as the Forest Stewardship Council (FSC), the Sustainable Forestry Initiative (SFI), the American Tree Farm System (ATFS), Master Logger Program or other systems that evolve over time to be accepted in the forest products marketplace.

The Department of Environmental Protection and the Department of Agriculture has assisted BGS by participating in BGS's EPP committee and by reviewing RFQ's and purchase contracts for environmental concerns and specifications. This inter-agency partnership has been very effective for ensuring the procurement of environmentally preferable products and has brought the State of Maine considerable recognition for being one of the leading states in the nation for "Leading by Example".

Under the EPP policy, BGS has undertaken several initiatives in coordination with other agencies.

- Requiring Green Seal's certification for applicable cleaning chemicals and hand soaps (GS 37, 41) and documenting a review of appropriate disinfectants and the development of standard operating procedures for use (see Appendix A, Table A).

2213 pounds of total product have been reduced, 242 of which was considered hazardous material. Stronger chemicals such as disinfectants are being reduced due to a standard operating procedure detailing what gets disinfected.

- Requiring EPEAT's rating of electronic equipment and participation with North East Recycling Council's State Electronics Challenge and being awarded the Environmental Merit Award in April 2011 by the U.S. EPA (see Appendix A, Table B).

1.5 million kWh were reduced in 2010 and 00 kWh reduced through October 2011 by using EPEAT certified electronic equipment and computers which is enough electricity to power 00 U.S. households for a year.

00 Metric Tons of CO2 Equivalent green house gasses were reduced which is equivalent to removing 00 passenger cars from the road for a year

00 pounds of toxic materials, including lead & mercury (specifically 00grams of mercury which is equivalent to 00 mercury fever thermometers).

00 lbs of hazardous waste reduced from end of life management of the unit.

- Ending the use of lead Wheel Weights on state vehicles (2008).

Maine estimates that close to 20,000 pounds of lead fell annually on to Maine roadsides in the form of external lead wheel weights from vehicle tires. The lead wheel weights degrade and contribute to lead levels in water runoff and roadside dust. In July 2006 the State of Maine began leading by example with transition of the State light duty fleet away from lead to steel wheel weights. In 2007 the transition expanded to the University of Maine at Orono light duty fleet and to the State DOT heavy duty fleet. Maine DOT became the first State heavy duty fleet in the country to eliminate the use of lead wheel weights. Maine DOT is using an internal balancing product that is not only environmentally preferable but has improved performance and saves money (as a permanent balancing solution). State agencies estimate that they are collectively avoiding the purchase of 1100 lbs of lead annually with the transition. School bus fleet interest began with the Milo area school transportation fleet transition to the product in use by DOT. State procurement language has been amended to require delivery of new light and heavy duty vehicles with the specified safer alternative wheel balancing products--the language additionally impacts many municipal school bus purchases. Leading by example by State agencies and the University contributed to the Legislature's unanimous passage of LD 986 *An Act to Protect the Public Health and the Environment by Prohibiting the Sale of Wheel Weights Containing Lead or Mercury* in spring 2009. <http://www.mainelegislature.org/ros/LOM/LOM124th/124R1/PUBLIC125.asp> In late summer 2009 EPA announced that they would begin federal rulemaking to ban the use of lead wheel balancing products.

- Requiring specifications for Carpet procurement as set forth in the MOU (Memorandum of Understanding) signed by the DEP Commissioner with CARE (Carpet America Recovery Effort) in April of 2009.
- Requiring specifications for paint based on limited content of volatile organic compounds (VOCs).
- Requiring specifications for environmentally preferable ice and snow melt products;
- Requiring documentation of mercury levels within lamps and lighting products to ensure conformance with LEED (EB- existing buildings) standard.
- Requiring specifications on procurement of uniforms to conform to an established code of conduct requiring vendors to provide products under healthy, safe, and fair working conditions.

**Environmental Benefits from Green Seal Certified Cleaning Chemical Purchases (Appendix A, Table A):**

year	buildings	sq ft						
<b>2011</b>	40	1,650,066						
type of cleaner	product	cases	oz/ bottle	bottles/ case	oz/ case	total ounces	total gallons	
All purpose	9700	5	64	5	320	1,600	12.5	
Bathroom	9030	7	64	5	320	2,240	17.5	
glass cleaner	9421	2	64	5	320	640	5	
hand soap	Gojo foam GS	250	42	3	126	31,500	246	
						<b>35,980</b>	<b>281</b>	
disinfectant*	9080	4	64	5	320	1,280	10	
year	buildings	sq ft						
<b>2010</b>	40	1,650,066						
type of cleaner	product	cases	oz/ bottle	bottles/ case	oz/ case	total ounces	total gallons	
All purpose	Canberra 4000	12	64	5	320	3,840	30	
Bathroom	Canberra 4030	10	64	5	320	3,200	25	
glass cleaner	Canberra 4020	2	64	5	320	640	5	
hand soap	Gojo foam GS	250	42	3	126	31,500	246	
						<b>39,180</b>	<b>306</b>	
disinfectant*	Canberra 4080	5	64	5	320	1,600	12.5	
year	buildings	sq ft						
<b>2009</b>	37	1,387,923						
type of cleaner	product	cases	oz/ bottle	bottles/ case	oz/ case	total ounces	total gallons	
All purpose	Canberra 4000	27.5	64	5	320	8,800	68.75	
Bathroom	Canberra 4030	20	64	5	320	6,400	50	
glass cleaner	Canberra 4020	2.5	64	5	320	800	6.25	
hand soap	Gojo foam GS	233	42	3	126	29,358	229	
						<b>45,358</b>	<b>354</b>	
disinfectant*	Canberra 4080	5.5	64	5	320	1,760	13.75	
year	buildings	sq ft						
<b>2008</b>	38	1,437,234						
Multi surface cleaner		13	64	5	320	4,160	32.5	
All Surface cleaner		17	64	5	320	5,440	42.5	
hand soap	Gojo foam GS	213	42	3	126	26,838	210	
						<b>36,438</b>	<b>285</b>	
year	buildings	sq ft						
<b>2007</b>	38	1,437,234						
Glass Cleaner	640	2	64	5	320	640	5	
Bathroom Cleaner	1600	5	64	5	320	1,600	12.5	
All purpose cleaner	2240	7	64	5	320	2,240	17.5	
hand cleaner	Gojo foam GS	347	42	3	126	43,722	342	
						<b>48,202</b>	<b>377</b>	
disinfectant cleaner**		5	64	5	320	1,600	12.5	

\* disinfectants not calculated in EPP total, but usage will be tracked.

\*\* disinfectant cleaners no longer used as per the disinfectant SOP to reduce hazardous chemical usage.

**Environmental Benefits from EPEAT Certified Electronics Purchases (Appendix A, Table B):**

**Environmental Benefits from EPEAT™ Purchases  
For the State of Maine**

Calculations provided by the Northeast Recycling Council, Inc.  
Using the Electronics Environmental Benefits Calculator, Version 2.0, 3/19/2009

<b>EPEAT Purchasing Data (1/1/2010 – 11/01/2011)</b>					
<b>Product Type</b>	<b>EPEAT™-Registered Units</b>			<b>Total Units Purchased</b>	
	<b>Bronze</b>	<b>Silver</b>	<b>Gold</b>	<b>EPEAT + Non-EPEAT</b>	<b>% EPEAT</b>
<b>Desktops</b>	00	00	00	00	00
<b>LCD Monitors</b>	00	00	00	00	00
<b>Notebooks</b>	00	00	00	00	00

<b>Environmental Benefits</b>	<b>EPEAT™ Purchases</b>	
<b>Reductions In</b>	<b>How Much?</b>	<b>Equivalent To</b>
<b>Energy usage</b>	00 kWh	Electricity to power 00 U.S. households for a year
<b>Greenhouse gas emissions</b>	00 MTCE	Removing 00 passenger cars from the road for a year
<b>Toxic materials, including lead &amp; mercury</b>	00 kg (00 lbs)	
<b>Mercury Only</b>	00 g	00 mercury fever thermometers
<b>Municipal solid waste</b>	00 kg (00 lbs)	
<b>Hazardous waste</b>	00 kg (00 lbs)	End of life management
<b>Costs – resulting from life cycle energy use reductions</b>	\$00	Life cycle energy reductions, not user energy use reduction.

**Appendix B.)**

**Impact reductions for Maine's University system**

Still waiting on data from Michael Sauda

**Appendix C.)**

**Impact reductions for Maine's Community Colleges**

Still waiting on data from Amy Homens

## **University of Maine System Accomplishments Meeting Objectives of Clean Government Program (2011)**

University of Maine System (UMS) continues to improve its energy efficiency and environmental stewardship across all seven of its universities.

UMS expended just over \$16 million annually in energy costs in FY 2011 which was a 16% reduction in cost over FY2009's \$19 million cost. Most of this reduction is due to a reduction in the market rates and switching to natural gas which provides lower cost and lower CO2 emissions.

In FY 2011, UMS consumed over 83 million kWh of electricity, 1.5 million gallons of fuel oil, 2,036,184 MMBTUs of natural gas, and 60,000 gallons of gasoline.

From FY 2009 to FY2011, UMS increased electrical consumption (kWh) by 13%, reduced residual oil purchase (No.6 in barrels) by 67%, increased fuel oil purchase (No. 2, biodiesel, and kerosene in gallons) by 0.7 %, increased natural gas consumption ( in MMBTU) by 65%, and reduced gasoline consumption (in gallons) by 19%.

The following is a summary of UMS's continuing efforts to improve energy efficiency and environmental stewardship.

### **AASHE Climate Commitment**

All seven UMS campus Presidents have signed the American College and University Presidents Climate Commitment affiliated with the Association for the Advancement of Sustainability in Higher Education (AASHE).

Each campus has:

- Established a mechanism to guide the process

- Completed an inventory of greenhouse gas emissions

- Developed a Climate Action Plan that includes a target date and milestones for achieving campus climate neutrality

- Completed at least two tangible actions specified in the commitment to reduce greenhouse gas emissions

- Integrated sustainability into the curriculum and making it part of the educational experience

- Made the action plan, inventory and periodic progress reports publicly available

The following list describes the number of tangible actions taken by each campus under ACUP Climate Commitment:

UM:	5 tangible actions
UMA:	3 tangible actions
UMF:	4 tangible actions
UMFK:	3 tangible actions
UMM:	5 tangible actions
UMPI:	2 tangible actions
USM:	3 tangible actions

See: [http://rs.acupcc.org/search/?institution\\_name=&carnegie\\_class=%3F%3F&state\\_or\\_province=ME](http://rs.acupcc.org/search/?institution_name=&carnegie_class=%3F%3F&state_or_province=ME)

## **Leadership in Energy and Environmental Design (LEED)**

UMS is a member of the US Green Building Council.

UMS is a state leader in having a portfolio of LEED registered and LEED certified buildings.

UMS currently has 14 LEED registered/certified buildings. Broken down as follows:

- 3 LEED Gold certified buildings (USM, 3 buildings)
- 6 LEED Silver certified buildings (UM 3 buildings, UMF 1 building, USM 2 buildings)
- 4 LEED certified buildings (UM 1 building, UMF 1 building, USM 2 buildings)
- 1 LEED registered building, pending certification (UMFK)

## **Fleet Vehicles**

Purchase/lease of non-hybrid vehicles by UMS includes requirements that they have high gas mileage ratings and low emissions.

UMS has 19 hybrid vehicles system-wide.

## **Recycling**

On average, UMS recycles 4000 tons (65%) of its waste.

Recycling accounts for a reduction in carbon dioxide equivalent emissions of 13,080 tons.

## **Specific Campus Accomplishments**

### **University of Maine (UM)**

Assembled a high-level campus Energy Team to directly advise the UM Vice President for Finance and Administration regarding all matters related to campus energy use, including the environmental impact of energy decisions.

Through energy conservation efforts and fuel switching between #6 fuel oil and natural gas, UM achieved the Governor's Carbon Challenge in 2008 by reducing campus greenhouse gas emissions by 10% compared to 2005 emissions. UM was able to sustain this reduction in 2009. This was accomplished ahead of the original target date of 2010. The reduction is equivalent to about 7,000 metric tons of CO<sub>2</sub>. To date, the University has achieved a nearly 20% reduction from 2005 emissions.

Established a free shuttle-bus service between the UM campus and downtown Orono. The Black Bear Orono Express is a joint venture between UM, the Town of Orono, the Orono Village Association, Bangor Area Transit, and the Maine Department of Transportation. Ridership has been increasing steadily since service began and now stands at nearly 40,000 riders per academic year.

UM's Green Campus Initiative (GCI) and Maine Bound currently operate a bike program for students. The Blue Bikes program collects abandoned bicycles, repairs them, and makes them available free of charge to UM students who present a valid university ID. The university also continues to install more bike racks around campus to encourage biking.

Designated preferred parking and free permits for carpools at the Orono campus.

UM's campus master plan features pedestrian access as a central theme; in support of this concept, UM secured in excess of \$1.1 million dollars in state funding for development of new bike paths and pedestrian walkways. The primary paved bike trail that connects the campus core to a major, off-campus residential area (University Park) has been completely rebuilt, and the University has initiated construction on a new pedestrian thoroughfare called the "Black Bear Way" that will connect the primary residential part of campus with the Student Recreation and Fitness Center and the major athletics facilities on campus.

Implemented a campus-wide single-stream recycling program.

Custodial services currently use a wide variety of environmentally preferable cleaners. 75% of cleaning products used on campus (including all of the products used in the Student Recreation and Fitness Center) are Green Seal certified. Hand soap in campus restrooms is Green Seal certified.

Aubert Hall Laboratory Renovation Project included the construction of 3 new teaching labs, each equipped with new energy efficient fume hoods, and the remodeling of one existing chemistry lab, equipped with existing fume hoods. Rather than installing conventional constant volume fume hoods, new variable air volume fume hoods were installed, and the existing constant volume hoods were converted to variable air volume leading to increased energy efficiency. Additionally, the laboratory HVAC and lighting systems were integrated for occupied and unoccupied control increasing energy efficiency while ensuring safe operation and use of the laboratory.

UM has recently converted 4 campus buildings to natural gas, replacing in excess of 100,000 gallons of propane and oil consumed annually. Additionally, UM has installed gas service to 2 newly renovated buildings. CO<sub>2</sub>-equivalent emissions from natural gas utilization will be approximately 27% less than fuel oil and 16% less than propane.

UM has completed a comprehensive technical study of the campus energy infrastructure, including detailed analysis of a variety of large-scale cogeneration options and boiler upgrades at the central plant.

UM has recently renovated Alford Arena which included building energy systems improvements, such as a new high efficiency ice making system (utilizing heat pumps) and new dehumidification system.

Nutting Hall and Stewart Commons are currently being renovated which will include building envelope renewal, improved energy efficiency, and mechanical system upgrades.

The Orono campus Central Steam Plant is currently undergoing the installation of a new 60,000 lb/hr boiler and flue gas economizer. This single boiler replaces the two oldest and least efficient boilers in the Plant. The new boiler, Boiler 8, will be fired on natural gas with provision for alternative fuels. The project will be completed in 2012. UM expects a reduction of approximately 30,000 MMBTU (million BTU) in fuel use, which is equivalent eliminating the use of 216,000 gallons of fuel oil per year, or the total energy consumption of approximately 230 New England households per year. Also expected is an annual greenhouse gas emissions reduction of approximately 6,000 Metric Tons CO<sub>2</sub>e from baseline which is the equivalent of taking in excess of 1100 passenger vehicles off the road.



UM is investigating an on-campus composting facility for the reuse of food wastes from the dining commons.

UM continues to demonstrate commitment to environmental stewardship through its role as the State's land-grant university and its objectives for excellence in education and research. These initiatives include:

The offering of graduate programs that will provide students with exceptional opportunities to become environmental leaders, including the Sustainability MBA and a M.S. degree (and undergraduate minor) in Renewable Energy and the Environment. UM also offers an M.A. in Global Policy, with a concentration in International Environmental Policy.

UM researchers are working to deepen the understanding of climate change (UM's Climate Change Institute), and to develop new technologies that will catalyze significant change in the renewable energy industry (UM's Offshore Wind Laboratory and Forest Bioproducts Research Initiative).

Sustainability Solutions Initiative - a statewide, interdisciplinary effort to help solve Maine's most pressing economic and environmental problems through research and scholarship

UM was honored as one of three recipients of the Second Nature Climate Leadership Award in the doctorate degree-granting university category at the annual American College & University Presidents' Climate Commitment (ACUPCC) Summit.

### **University of Maine at Augusta (UMA)**

UMA reduced campus oil consumption through heating system improvements and administrative controls saving 32,761 gallons (20%) of oil over the last two fiscal years. This was done through administrative controls and heating system improvements.

UMA also reduced electrical consumption by 39,502 kWh (1.1%) over the last two fiscal years through some changes to higher efficiency lighting and administrative controls. This reduction takes into consideration the acquisition of the Gannet Building on Water Street in Augusta, which used 125,520 kWh in our first year of occupation (2011). Without the addition of the Gannett building, UMA's electrical consumption would have been reduced by 165,022 kWh (4.9%).

UMA developed a community public transportation system. The Kennebec Explorer provides free transportation to UMA students, with student id, going to or from the UMA Augusta campus and/or Gannet Building in downtown Augusta. The Kennebec Explorer is a joint venture with KVCAP, Maine General Health, USDOT, Maine DOT and other local businesses.

Purchased four electric golf carts to provide maintenance and security access across campus during non-winter months. The golf carts replace full size gas powered vehicles.

Gannett Building heating system was changed from oil to propane. According to the US Department of Energy this will reduce our carbon footprint emissions by approximately 10lbs CO<sub>2</sub> per gallon burned.

Removed one van from mail room vehicle fleet and reduced the number of mail runs.

Replaced the UMA IT department minivan with a compact hatchback.

Leased 2 passenger busses for sport teams rather than renting 4 passenger vans for travel. Now each team has one vehicle per trip rather than two.

UMA's Bangor campus is adding natural gas service to the entire campus that will serve all major buildings. All buildings will have the capacity for burning natural gas or heating oil through the use of dual fuel burners.

### **University of Maine at Farmington (UMF)**

UMF's Sustainable Campus Coalition was recognized in 2010 by the US House of Representatives for their work to make a clean energy campus a reality. UMF's Sustainable Campus Coalition has been instrumental in guiding UMF towards energy solutions that reduce greenhouse gases and reduce long term energy costs through implementation of ground source heat pumps, lighting retrofits, campus educational and awareness programs, and the development of UMF's Climate Action Plan with the goal of achieving carbon neutrality

UMF was recognized by the Princeton Review in 2011 as being on of the most environmentally responsible colleges in the US and Canada. See: [www.princetonreview.com/green-guide.aspx](http://www.princetonreview.com/green-guide.aspx) and [www.centerforgreenschools.org/greenguide](http://www.centerforgreenschools.org/greenguide).

UMF's second phase of energy efficiency renovations was undertaken in Ricker Hall which included complete improvement of the building envelope including the addition of insulation and new windows. Ricker also underwent replacement of all mechanical system with modern, efficient systems. The third phase of UMF's energy efficiency renovations is scheduled for the summer of 2012 and will include the drilling of geothermal wells to provide alternative energy to Preble Hall, Ricker Hall, Ricker Addition, and Mantor Library.

UMF rehabilitated 101 South Street to improve energy efficiency in an older campus building. The improvements were done by UMF Facilities Management staff which included conversion of the building's heating system from fuel oil to electric heat. This conversion reduced the campus fuel oil consumption by 1,500 gallons per year with a 17 ton reduction in carbon emissions. A UMF physics class researched the efficiency upgrades and a UMF student documented the work allowing UMF to bridge physical facilities energy efficiency work with its educational mission.

In 2010 and 2011, UMF worked with its local community to observe 350 Day, which increases understanding of global climate change. In 2010, UMF hosted a panel that focused on heating issues for low-income local residents and worked to raise money to help them with their heating bills and raise awareness of ways the UMF community could assist in winterizing local homes. In 2011, the community and college came together to host a demonstration of using alternative transportation, bicycling to a nearby farm and consuming food grown locally.

UMF continues a proactive approach to heating system replacements on campus. Initially targeting residential facilities that bear a twenty-four hour a day operation, two heating systems in Dakin and Stone Halls have been upgraded. The upgraded systems continue to use fuel oil as a heating source. Alternative renewable energy sources were considered but found fiscally and operationally not

practical. UMF expects the collective oil savings to be 8,000 gallons per year and a 90 ton reduction in carbon emissions per year. Individualized oil consumption meters have been installed to measure savings.

UMF has performed in-house boiler replacements at several small, wood framed buildings. Collectively, this represents an additional annual average reduction of 1,800 gallons in fuel oil consumption and reduction of 20 tons of carbon emissions.

UMF with the assistance of the Efficiency Maine incentive program has upgraded eight buildings with modern, high efficiency lighting technology. Savings information is not yet available for this work.

UMF is considering conversion of convert parking lot lighting from metal halide to light emitting diode (LED) technology. Analysis has indicated the potential for an annual reduction of over 33,000 kWh per year if Residential Lot 18 (at Prescott Field) and Residential Lot 26 (behind FRC) are converted.

#### **University of Maine at Fort Kent (UMFK)**

Replaced an obsolete shingled roof on the Blake Library, installed effective attic ventilation and added 12" of blown-in insulation.

Replaced the low roof on the Sports Center (approximately 9,400 square feet) with an EPDM roof with an R-value of 42, strengthened structural steel and upgraded lighting to improve efficiency.

Removed obsolete oil fired boiler in the Sports Center (gym complex) to make way for installation of wood pellet fired boiler. This boiler will serve both the Sports Center and the neighboring dormitory.

Installed electrical sub-metering on 8 building services to provide better measurement and control of electrical usage in individual buildings for future energy projects.

#### **University of Maine at Machias (UMM)**

UMM reduced fuel oil consumption by 955 gallons (1%) over last two fiscal years. Heating system improvements and administrative controls were implemented in 2008 resulting in an 18% reduction in consumption at that time. The 2008 improvements have maintained reduced fuel oil consumption. Additional heating system and energy management systems were installed in 2011 which will result in additional reductions in consumption.

UMM also reduced electrical consumption by 74,527 kWh (4.4%) over last two fiscal years through use of high efficiency lighting and administrative controls.

Kilburn Commons was renovated in 2011 which added computerized building energy management system, new boilers, air to air heat exchangers, and new energy efficient windows which improved energy efficiency of building.

The Reynolds Center was renovated in 2011 which added computerized building energy management system and new boilers which improved energy efficiency of building.

Sennett Hall had single pane windows replaced with energy efficient windows in 2011 which should improve building's energy efficiency.

Installed hour meters on all 7 new campus boilers to improve measurement of oil consumption in near real time. This provides opportunity for intervention on abnormal consumption prior to having tank refilled.

Used Green Seal certified cleaning chemicals for janitorial services. Purchased toilet paper with 100% recycled content.

Refinished wood gym floors of Reynolds Center with water based, Green Seal products.

Started a campus community garden 2009 and began composting cafeteria organic waste, leaves, and grass clippings. Built a campus greenhouse which provides locally grown produce for campus cafeteria and local food bank.

Wood chips from tree trimming used for walking trail maintenance.

Removed slate entrance to Kilburn Hall and reused for walkway and floor for new greenhouse.

Reused concrete removed from O'Brien House walkway renovation and placed under the composting pile to reduce rocks and gravel from getting in to the composting material during weekly mixing.

### **University of Maine at Presque Isle (UMPI)**

Completed Folsom-Pullen Phase 2 renovation as part of a major effort to reduce the university carbon foot print concluded in the fall of 2011. The project consisted of an energy efficient upgrade of the building envelope for Folsom and Pullen Halls which are the major classroom facilities for the campus. The upgrade included new triple pane windows, energy efficient lighting, new wall insulation and removal of inefficient heating convectors and incorporation of air to air heat pumps.

UMPI installed a rated 18 kW photo-voltaic solar array and a Viessmann biomass boiler system as part of Folsom-Pullen Phase 2 renovation. The photo-voltaic solar array incorporates a monitoring system that provides useful information to the National Renewable Energy Laboratory and the students of the University of Maine at Presque Isle.

The biomass boiler system and the air to air heat pump system allowed the university to eliminate two oil fired boilers and a 10,000 gallon underground fuel tank. The university is planning to complete the recycling of waste products by using the wood ash to fertilize the grounds on campus.

The biomass boiler system also provided information useful in the classroom. The biomass fuel used in the operation is produced and purchased from northern Maine stimulating the local economy.

UMPI offered courses for students with interest in sustainability. These courses include Energy Law and Public Policy, Sustainability Management and Energy Fuels all designed for academic programming with Energy and Sustainability Concentration.

UMPI continues to install energy efficient lighting annually with the assistance of Efficiency Maine's resources.

UMPI continues to operate a 600 KW wind turbine reducing the electrical energy costs and carbon footprint of the campus.

UMPI received the 2010 Second Nature Leadership Award for Institutional Excellence in Climate Leadership in the public baccalaureate category.

### **University of Southern Maine**

USM converted the Portland Campus Central Heat Plant from No. 6 fuel oil to natural gas. This switch reduced USM's carbon output by 1,048 metric tons and will save about \$300,000 a year in fuel costs. By transitioning to natural gas, USM has already met goals originally set for 2020 in the Climate Action Plan.

Developed a system to track in- and out-of-state transportation use by USM staff traveling for business to gather more detailed data for Climate Action Plan reporting,

USM's Sustainability Office worked with faculty to intersperse sustainability in academic programs. Projects have covered waste (recycling, waste reduction, composting), sustainable and renewable energy, water quality, sustainable agriculture, transportation issues and have encompassed life cycle analysis, education and awareness, marketing, journalism, economic modeling, and other academic subjects.

USM partnered with EcoMaine in 2010 to offer single stream recycling on the Portland and Gorham campuses.

USM has designed a new, more attractive and user-friendly waste collection system in public areas as well as an education campaign to facilitate a greater recycling rate.

Participated in the national recycling competition RecycleMania, in the Waste Reduction category, to not only increase recycling but decrease waste overall.

Sent USM Dining Services waste fryer oil to Maine Standard BioFuel, a local biodiesel manufacturer located in Portland.

Coffee grounds from Portland and Gorham dining operations are collected and spread as a soil amendment on campus.

USM created a comprehensive Waste Management program that includes innovative and streamlined ways of reusing and recycling all types of waste including electronic and technology waste, clothing, metal, wood, and batteries.

Retrofitted lighting in the Costello Sports Complex (housing the Fieldhouse, Ice Arena, and Hill Gym) which will provide better lighting levels with better control and higher efficiency that will save an estimated 415,000 kWh/year.

Utilized USM's internal, revolving Green Fund, to replace shower heads in all the residence halls with low-flow models resulting in a daily savings of 15,000 gallons of water and eight MMBtu of energy.

The parking garage on the Portland campus is slated to receive a full lighting retrofit replacing existing metal halide fixtures with long-life high efficiency fluorescents which will save 265,000 kWh annually.

USM purchased Renewable Energy Certificates to offset 20% of its total electricity consumption with renewable energy. 15% of the certificates are from Maine low environmental impact hydropower and 5% are from Green-E certified wind power.

USM's Custodial Services employed a number of environmentally sensitive cleaning practices including using cleaning products which are third-party certified as green cleaners. Currently, 66% of USM's cleaning products are Green Seal certified.

USM Grounds composted most lawn and leaf waste from the Portland and Gorham campuses and utilized the final product as a nutritious and economical soil amendment.

USM Facilities Management created a policy that works to replace old or outdated vehicles, machinery, or other equipment with smaller, more fuel-efficient models, whenever possible.

USM's Gorham campus is a recognized arboretum and is home to over 100 unique species of trees which are native and/or non-invasive.

USM, working with the City of Portland on bicycle and pedestrian planning, secured 13 new bike- and user-friendly bicycle racks to replace some failing racks and offer increased bike parking in high-demand areas. USM has committed to continue increasing the quantity and quality of bicycle parking on its campuses.

USM Office of Sustainability developed a new and comprehensive website to inform students, staff, community members, and prospective students and parents about not only what USM is doing to protect the environment but what visitors can do on their own to live sustainably.

<http://www.usm.maine.edu/sustainability>